

## Innovative Plant Protection Systems

### Key Subject Area

#### Treatment of urban trees by means of stem application

The application of chemical plant protection in urban spaces involves difficulties and risks. It can be assumed that the plant protective agents employed are emitted into neighbouring areas, especially when controlling pests in the tops of avenue trees. Due to drift or drip down, these substances can endanger not only the traffic but also the health of passers-by and residents. The application of suitable agents by means of stem application could minimise or prevent such emissions and could primarily be used experimentally in situations where trees would otherwise have to be felled.

### The method

Stem application is a method that enables the direct positioning of substances in the water transport vessels of lignified plants. In most cases, injections are made using tailor-made devices especially designed for the purpose (Fig. 1).



Fig. 1: Stem application

### The implement

A tree applicator that is used in practise (in Australia) is the ChemJet® (Fig. 2). The ChemJet® is a kind of syringe which, after having been fixed to the pre-drilled stem, pushes the applicable substance into the xylem vessels of the plants to be treated by the force of a spring. This implement has already demonstrated its ability in experimental tests on the clarification of fundamental issues.



Fig. 2: ChemJet® tree applicator

### The possible applications

Stem application for the treatment of urban trees in general and avenue trees in particular is still at the research stage. We offer our collaboration in all fields in which stem application offers an opportunity to preserve urban and avenue trees and to prevent their premature removal.



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